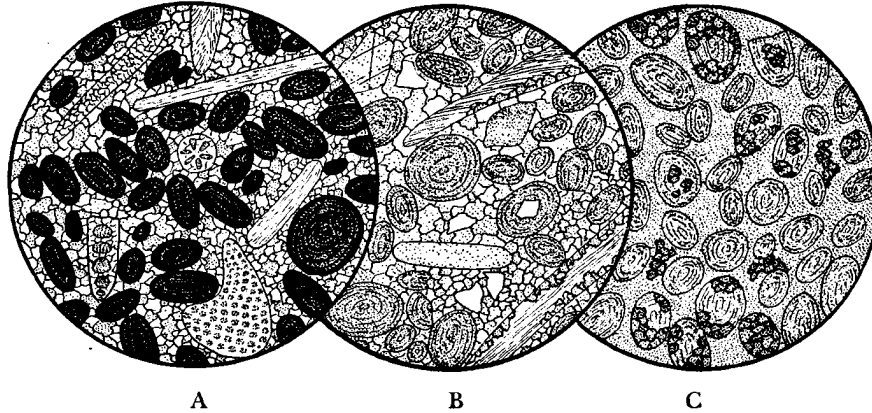


## GY 402 Sedimentary Petrology (2015)

Carbonate Thin-sections

3: Temperate Limestones



Oolite grainstones in thin section (field of view for each approximately 2 mm).  
From Williams, H., Turner, F.J and Gilbert, C.M., 1954. Petrography. W.H. Freeman & Co., 406pp.

**Introduction:** Temperate shelf carbonates are very different from their tropical counterparts in terms of both allochem composition and diagenesis (this you will learn about next week). Gone are the ooids, intraclasts, peloids and “mud” that form in warm water conditions. Instead, get ready for mollusks, barnacles, bryozoans and non-carbonate grains (e.g., quartz and feldspar).

**Lab exercise (do in your note books, not re-doable):** A list of temperate shelf limestone thin-sections that will be available in the lab is provided below. None have hand specimens this week. I would like you to look at one of these coveted, rare and unique thin-sections (in fact all of you should show your respect to them by never turning your back to them in the lab), and produce a petrography summary page in your hard covered note book using the standard format. Be sure to identify as many of the diverse allochems as possible (i.e., label what they are on your thin-section diagram and/or draw separate diagrams in your notebook illustrating their petrographic characteristics). Remember, most of these thin-sections also contain non-carbonate grains; however, use the carbonate classification schemes that we discussed in class to name your rock.

**Discussion Question (re-doable):** In a separate paragraph at the end of your thin section report, discuss micrite envelopes in ½ to one page (handwritten = 100-300 words preferably with a separate diagram/sketch). What are they? How do they form etc. This discussion question is re-doable for revised credit.

**Due Date:** I expect 1 thin section reports in your notebooks and a separate discussion page by the deadline specified on the website and the class calendar.

Coveted cold water skeletal limestones from New Zealand:

30/18, 30/19, 32/54, 34/11, 43/5, 44/8 (2), 44/6, 44/9, 44/11, 46/7, 46/8, 47/4, 47/8, 47/9,  
48/4 (2), 49/45, 49/47, 54/15, 56/9, 90/10, 96/40, DE9-10, DS3-1, PS1-8  
(careful; these are research slides - don't break them.)